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=> fil reg; d stat que l3; d sqide l3 1-2; fil capl uspatf; s l3
FILE 'REGISTRY' ENTERED AT 16:55:13 ON 05 DEC 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    4 DEC 2005  HIGHEST RN 869277-23-6
DICTIONARY FILE UPDATES:   4 DEC 2005  HIGHEST RN 869277-23-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

*********************************************************************
*                                                                   *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                   *
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Structure search iteration limits have been increased.  See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html


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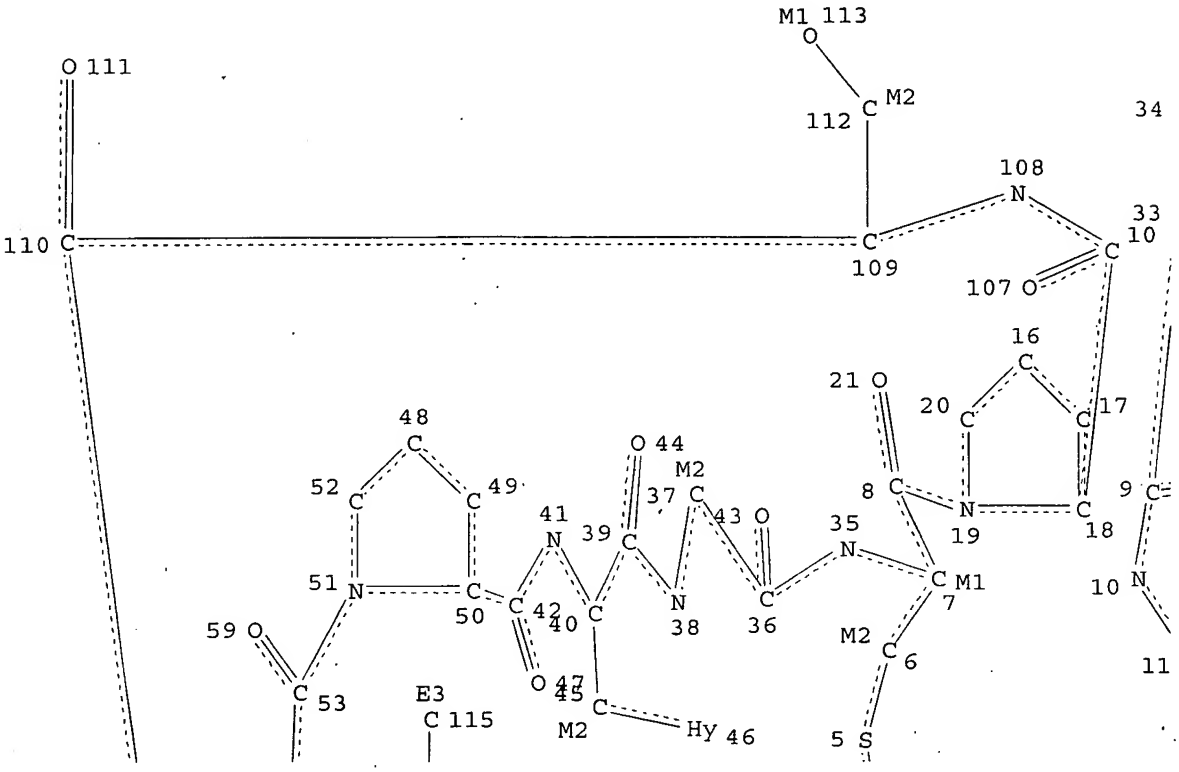
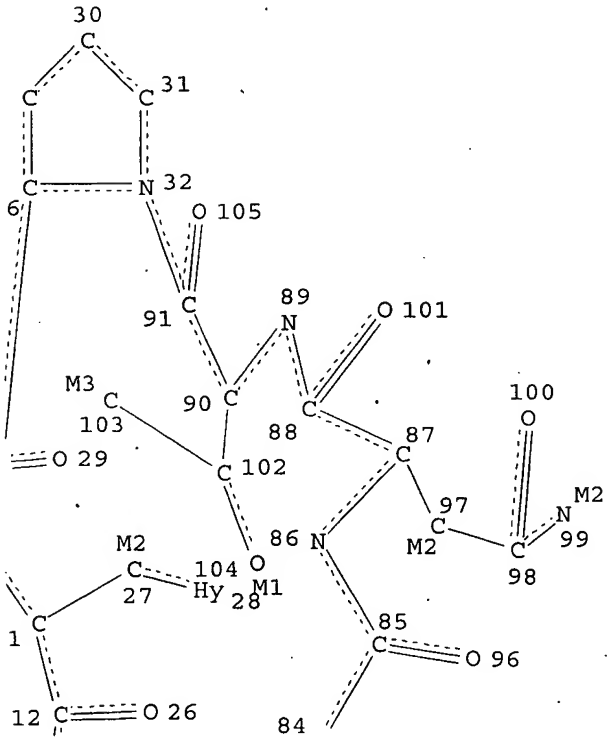
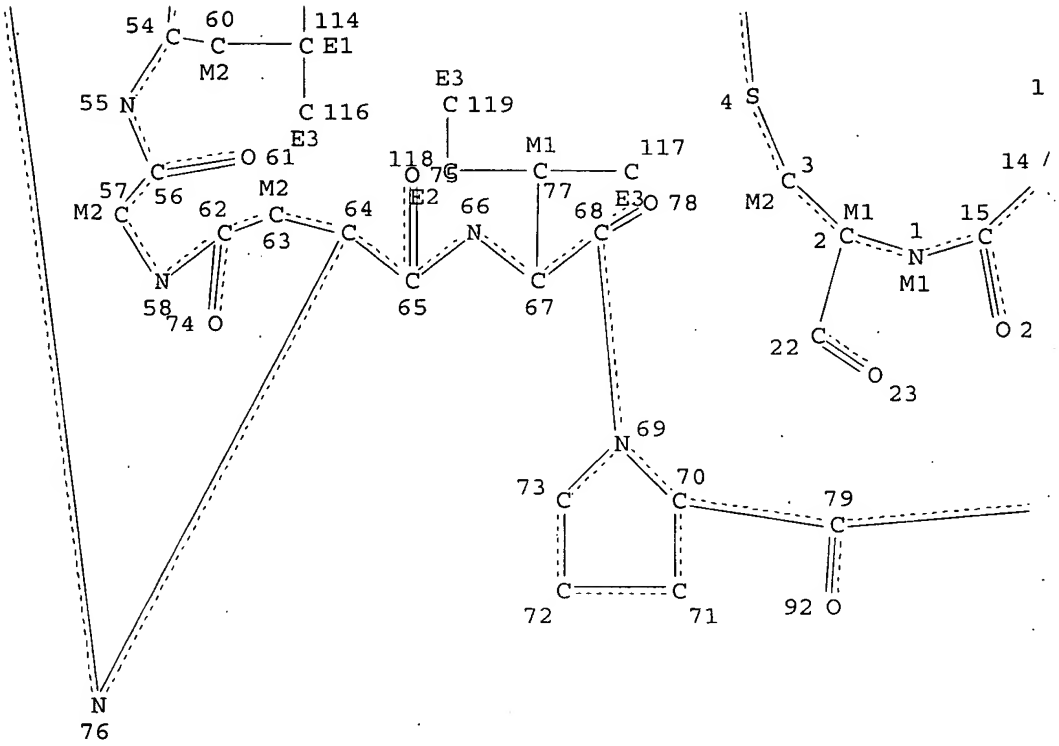


Page 1-A



structure displayed in easier-to-view format at blue tab

Page 1-B



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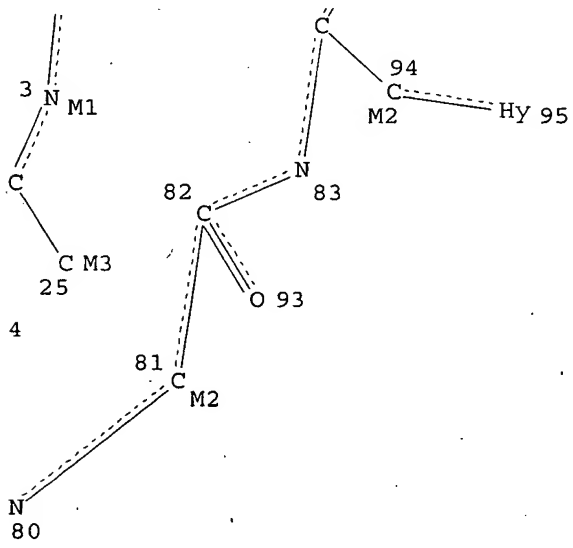

Page 2-B
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 119

STEREO ATTRIBUTES: NONE
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100.0% PROCESSED     270 ITERATIONS                          2 ANSWERS
SEARCH TIME: 00.00.01
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L3   ANSWER 1 OF 2  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   647807-36-1  REGISTRY
CN   L-Cysteine, glycyl-L-leucyl-L-prolyl-L-tryptophylglycyl-L-cysteinyl-L-
     prolyl-L-seryl-L-α-aspartyl-L-isoleucyl-L-prolylglycyl-L-tryptophyl-
     L-asparaginyl-L-threonyl-L-prolyl-L-tryptophyl-L-alanyl-, 19-methyl ester,
     (9→1)-lactam, cyclic (6→19)-disulfide (9CI)  (CA INDEX NAME)
FS   PROTEIN SEQUENCE; STEREOSEARCH
SQL  19
NTE  modified (modifications unspecified)
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type	------ location ------		description
bridge	Gly-1	- Asp-9	lactam
bridge	Cys-6	- Cys-19	disulfide bridge

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SEQ      1 GLPWGCPSDI PGWNTPWAC
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RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF C96 H127 N23 O24 S2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); PREP (Preparation); PRP (Properties)

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2005 ACS on STN
RN 647807-35-0 REGISTRY
CN L-Cysteine, glycyl-L-leucyl-L-prolyl-L-tryptophylglycyl-L-cysteinyl-L-prolyl-L-seryl-L-α-aspartyl-L-isoleucyl-L-prolylglycyl-L-tryptophyl-L-asparaginyl-L-threonyl-L-prolyl-L-tryptophyl-L-alanyl-, (9→1)-lactam, cyclic (6→19)-disulfide (9CI) (CA INDEX NAME)
OTHER NAMES:
CN BI 32169
FS PROTEIN SEQUENCE; STEREOSEARCH
SQL 19
NTE

type	------ location ------		description
bridge	Gly-1	- Asp-9	lactam
bridge	Cys-6	- Cys-19	disulfide bridge

SEQ 1 GLPWGCPSDI PGWNTPWAC

RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF C95 H125 N23 O24 S2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PRP (Properties)

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

FILE 'CAPLUS' ENTERED AT 16:55:14 ON 05 DEC 2005
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FILE 'USPATFULL' ENTERED AT 16:55:14 ON 05 DEC 2005
CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

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L8          4 L3

=> dup rem l8
PROCESSING COMPLETED FOR L8
L9            4 DUP REM L8 (0 DUPLICATES REMOVED)
                ANSWERS '1-3' FROM FILE CAPLUS
                ANSWER '4' FROM FILE USPATFULL

=> d ibib ed abs hitrn 1-4; fil hom

L9   ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:         2004:60541  CAPLUS
DOCUMENT NUMBER:          140:105298
TITLE:                    Bicyclic oligopeptides and their use as glucagon
                          receptor antagonists
INVENTOR(S):              Potterat, Olivier; Streicher, Ruediger; Wagner, Klaus;
                          Maurer, Till; Mack, Juergen; Peters, Stefan
PATENT ASSIGNEE(S):       Boehringer Ingelheim Pharma GmbH & Co. KG, Germany
SOURCE:                   PCT Int. Appl., 33 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   2
PATENT INFORMATION:

     PATENT NO.           KIND   DATE       APPLICATION NO.          DATE
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            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
            PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
            TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
            KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
            FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
            BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     CA 2489189            AA    20040122   CA 2003-2489189          20030715
     EP 1525218            A1    20050427   EP 2003-763864           20030715
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
     US 2004072736         A1    20040415   US 2003-621272           20030717
PRIORITY APPLN. INFO.:                      EP 2002-15907        A   20020717
                                            US 2002-416797P      P   20021008
                                            WO 2003-EP7657       W   20030715

OTHER SOURCE(S):          MARPAT 140:105298
ED   Entered STN:  26 Jan 2004
AB   The invention relates to a bicyclic oligopeptide or ester thereof having
     the capability to inhibit the glucagon receptor, which essentially
     consists of(a) a first cyclic group, which comprises at least one cysteine
     group and is formed by an amide bonding of the N-terminal amino acid with
     the second carboxylate group of a diacid amino acid, and (b) a second
     cyclic group which is formed by an amide bonding of an amino acid with the
     -carboxylate group of said diacid amino acid, and by a disulfide bonding
     of the C-terminal cysteine and a cysteine group within the first cyclic
     group (a); and to the use of such bicyclic oligopeptides for the preparation of
     a medicament for the treatment or prevention of diseases, in which
     glucagon receptors are involved.
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IT **647807-35-0P**
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PAC (Pharmacological activity); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(bicyclic oligopeptides as glucagon receptor inhibitors in relation to disease treatment and combination with other agents and metabolic stability)

IT **647807-36-1P**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(bicyclic oligopeptides as glucagon receptor inhibitors in relation to disease treatment and combination with other agents and metabolic stability)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:60532 CAPLUS
DOCUMENT NUMBER: 140:105297
TITLE: Bicyclic oligopeptides and their use as glucagon receptor antagonists
INVENTOR(S): Potterat, Olivier; Streicher, Ruediger; Wagner, Klaus; Maurer, Till; Mack, Juergen; Peters, Stefan
PATENT ASSIGNEE(S): Boehringer Ingelheim Pharma GmbH & Co. KG, Germany
SOURCE: PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004007524	A2	20040122	WO 2003-EP7311	20030708
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004072736	A1	20040415	US 2003-621272	20030717
PRIORITY APPLN. INFO.:			EP 2002-15907 A	20020717
			US 2002-416797P P	20021008

OTHER SOURCE(S): MARPAT 140:105297
ED Entered STN: 26 Jan 2004
AB The invention relates to a bicyclic oligopeptide or ester thereof having the capability to inhibit the glucagon receptor, which essentially consists of (a) a first cyclic group, which comprises at least one cysteine group and is formed by an amide bonding of the N-terminal amino acid with the second carboxylate group of a diacid amino acid, and (b) a second cyclic group which is formed by an amide bonding of an amino acid with the -carboxylate group of said diacid amino acid, and by a disulfide bonding of the C-terminal cysteine and a cysteine group within the first cyclic group (a); and to the use of such bicyclic oligopeptides for the

preparation of a medicament for the treatment or prevention of diseases, in which glucagon receptors are involved.

IT **647807-35-0P**
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PAC (Pharmacological activity); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(bicyclic oligopeptides as glucagon receptor inhibitors in relation to disease treatment and combination with other agents and metabolic stability)

IT **647807-36-1P**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(bicyclic oligopeptides as glucagon receptor inhibitors in relation to disease treatment and combination with other agents and metabolic stability)

L9 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:625549 CAPLUS
DOCUMENT NUMBER: 141:310378
TITLE: BI-32169, a bicyclic 19-peptide with strong glucagon receptor antagonist activity from Streptomyces sp
AUTHOR(S): Potterat, Olivier; Wagner, Klaus; Gemmecker, Gerd; Mack, Juergen; Puder, Carsten; Vettermann, Regine; Streicher, Ruediger
CORPORATE SOURCE: Boehringer Ingelheim Pharma GmbH Co. KG, Biberach an der Riss, D-88397, Germany
SOURCE: Journal of Natural Products (2004), 67(9), 1528-1531 CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 05 Aug 2004
AB A new bicyclic 19-peptide, BI-32169, was isolated from the culture broth of Streptomyces sp. (DSM 14996). Its structure was established by amino acid anal., mass spectrometry, and 2D NMR anal. BI-32169 consists exclusively of protein amino acids and is cyclized from the side chain of Asp9 to the N-terminus of Gly1. One disulfide bond between Cys6 and Cys19 forms a bicyclic structure. BI-32169 and its Me ester derivative showed potent inhibitory activity against the human glucagon receptor (IC50 440 and 320 nM, resp.) in a functional cell-based assay.

IT **647807-35-0P**, BI 32169
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(BI-32169 is a bicyclic 19-peptide from Streptomyces sp. with strong glucagon receptor antagonist activity)

IT **647807-36-1P**
RL: BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(BI-32169 is a bicyclic 19-peptide from Streptomyces sp. with strong glucagon receptor antagonist activity)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 4 USPATFULL on STN
ACCESSION NUMBER: 2004:95282 USPATFULL
TITLE: Bicyclic oligopeptides

INVENTOR(S): Potterat, Olivier, Mittelbiberach, GERMANY, FEDERAL REPUBLIC OF
Streicher, Ruediger, Biberach, GERMANY, FEDERAL REPUBLIC OF
Wagner, Klaus, Warthausen, GERMANY, FEDERAL REPUBLIC OF
Maurer, Till, Oberstadion, GERMANY, FEDERAL REPUBLIC OF
Mack, Juergen, Biberach, GERMANY, FEDERAL REPUBLIC OF
Peters, Stefan, Biberach, GERMANY, FEDERAL REPUBLIC OF

PATENT ASSIGNEE(S): Boehringer Ingelheim Pharma GmbH & Co. KG, Ingelheim, GERMANY, FEDERAL REPUBLIC OF, 55216 (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004072736	A1	20040415
APPLICATION INFO.:	US 2003-621272	A1	20030717 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-416797P	20021008 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: BOEHRINGER INGELHEIM CORPORATION, 900 RIDGEBURY ROAD, P. O. BOX 368, RIDGEFIELD, CT, 06877
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
LINE COUNT: 732
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to a bicyclic oligopeptide or ester thereof having the capability to inhibit the glucagon receptor, comprised of:

(a) a first cyclic group, which comprises at least one cysteine group and is formed by an amide bonding of the N-terminal amino acid with the second carboxylate group of a diacid amino acid, and

(b) a second cyclic group which is formed by an amide bonding of an amino acid with the α-carboxylate group of said diacid amino acid, and by a disulfide bonding of the C-terminal cysteine and a cysteine group within the first cyclic group (a); and

to the use of such bicyclic oligopeptides for the preparation of a medicament for the treatment or prevention of diseases, in which glucagon receptors are involved.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **647807-35-0P**
(bicyclic oligopeptides as glucagon receptor inhibitors in relation to disease treatment and combination with other agents and metabolic stability)
IT **647807-36-1P**
(bicyclic oligopeptides as glucagon receptor inhibitors in relation to disease treatment and combination with other agents and metabolic stability)

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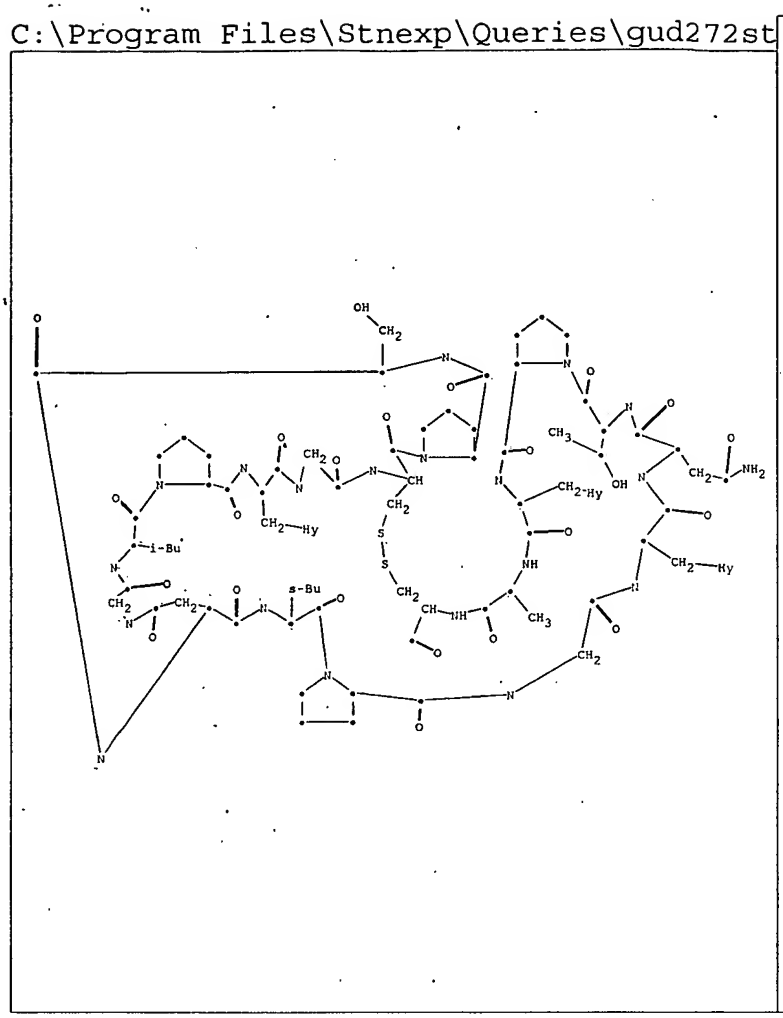

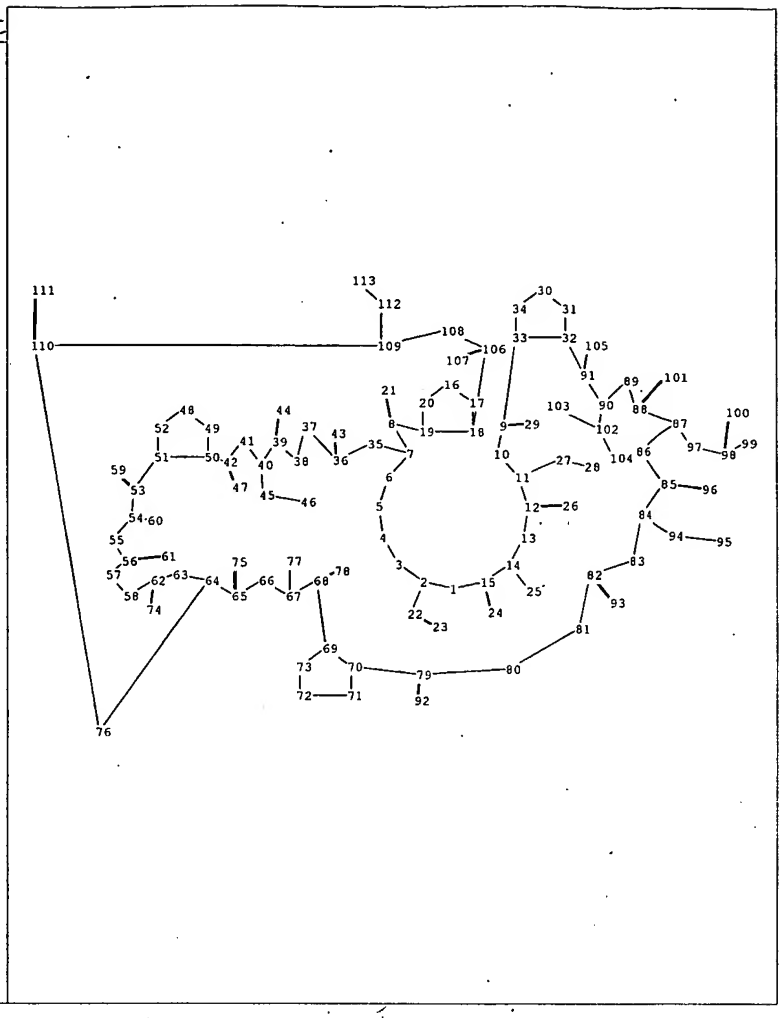

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107 111 112 113
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2-22 8-21 9-29 11-27 12-26 14-25 15-24 22-23 27-28 36-43 39-44
40-45 42-47 45-46 53-59 54-60 56-61 62-74 65-75 67-77 68-78
79-92 82-93 84-94 85-96 87-97 88-101 90-102 91-105 94-95 97-98
98-99 98-100 102-103 102-104 106-107 109-112 110-111 112-113
ring bonds :
1-2 1-15 2-3 3-4 4-5 5-6 6-7 7-8 7-35 8-19 9-10 9-33 10-11
11-12 12-13 13-14 14-15 16-17 16-20 17-18 18-19 18-106 19-20
30-31 30-34 31-32 32-33 32-91 33-34 35-36 36-37 37-38 38-39
39-40 40-41 41-42 42-50 48-49 48-52 49-50 50-51 51-52 51-53
53-54 54-55 55-56 56-57 57-58 58-62 62-63 63-64 64-65 64-76
65-66 66-67 67-68 68-69 69-70 69-73 70-71 70-79 71-72 72-73
76-110 79-80 80-81 81-82 82-83 83-84 84-85 85-86 86-87 87-88
88-89 89-90 90-91 106-108 108-109 109-110
exact/norm bonds :
1-2 1-15 2-3 3-4 4-5 5-6 6-7 7-8 7-35 8-19 8-21 9-10 9-29
9-33 10-11 11-12 12-13 12-26 13-14 14-15 15-24 16-17 16-20
17-18 18-19 18-106 19-20 22-23 27-28 30-31 30-34 31-32 32-33
32-91 33-34 35-36 36-37 36-43 37-38 38-39 39-40 39-44 40-41
41-42

42-47 42-50 45-46 48-49 48-52 49-50 50-51 51-52 51-53
53-54 53-59 54-55 55-56 56-57 56-61 57-58 58-62 62-63 62-74
63-64 64-65 64-76 65-66 65-75 66-67 67-68 68-69 68-78 69-70
69-73 70-71 70-79 71-72 72-73 76-110 79-80 79-92 80-81 81-82
82-83 82-93 83-84 84-85 85-86 85-96 86-87 87-88 88-89 88-101
89-90 90-91 91-105 94-95 98-99 98-100 102-104 106-107 106-108
108-109 109-110 110-111
exact bonds :
2-22 11-27 14-25 40-45 54-60 67-77 84-94 87-97 90-102 97-98
102-103 109-112 112-113

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom
10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom
18:Atom 19:Atom 20:Atom 21:CLASS 22:CLASS 23:CLASS 24:CLASS
25:CLASS 26:CLASS 27:CLASS 28:Atom 29:CLASS 30:Atom 31:Atom
32:Atom 33:Atom 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom
40:Atom 41:Atom 42:Atom 43:CLASS 44:CLASS 45:CLASS 46:Atom
47:CLASS 48:Atom 49:Atom 50:Atom 51:Atom 52:Atom 53:Atom 54:Atom
55:Atom 56:Atom 57:Atom 58:Atom 59:CLASS 60:CLASS 61:CLASS 62:Atom
63:Atom 64:Atom 65:Atom 66:Atom 67:Atom 68:Atom 69:Atom 70:Atom
71:Atom 72:Atom 73:Atom 74:CLASS 75:CLASS 76:Atom 77:CLASS
78:CLASS 79:Atom 80:Atom 81:Atom 82:Atom 83:Atom 84:Atom 85:Atom
86:Atom 87:Atom 88:Atom 89:Atom 90:Atom 91:Atom 92:CLASS 93:CLASS
94:CLASS 95:Atom 96:CLASS 97:CLASS 98:CLASS 99:CLASS 100:CLASS
101:CLASS 102:CLASS 103:CLASS 104:CLASS 105:CLASS 106:Atom
107:CLASS 108:Atom 109:Atom 110:Atom 111:CLASS 112:CLASS 113:CLASS
Generic attributes :
28:
Saturation : Unsaturated
Number of Carbon Atoms : 7 or more
Number of Hetero Atoms : less than 2
Type of Ring System : Polycyclic
46:
Saturation : Unsaturated
Number of Carbon Atoms : 7 or more
Number of Hetero Atoms : less than 2
Type of Ring System : Polycyclic
95:
Saturation : Unsaturated
Number of Carbon Atoms : 7 or more
Number of Hetero Atoms : less than 2
Type of Ring System : Polycyclic

```
=> fil reg; d que l10
FILE 'REGISTRY' ENTERED AT 17:03:29 ON 05 DEC 2005

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STRUCTURE FILE UPDATES:   30 NOV 2005  HIGHEST RN 869059-01-8
DICTIONARY FILE UPDATES:  30 NOV 2005  HIGHEST RN 869059-01-8

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TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

*********************************************************************
*                                                                   *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                   *
*********************************************************************

Structure search iteration limits have been increased.  See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

L10           2 SEA FILE=REGISTRY ABB=ON  GLPWGCPSDIPGWNTPWAC/SQSFP

=> d sqide l10 1-2

L10   ANSWER 1 OF 2  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   647807-36-1  REGISTRY
CN   L-Cysteine, glycyl-L-leucyl-L-prolyl-L-tryptophylglycyl-L-cysteinyl-L-
     prolyl-L-seryl-L-α-aspartyl-L-isoleucyl-L-prolylglycyl-L-tryptophyl-
     L-asparaginyl-L-threonyl-L-prolyl-L-tryptophyl-L-alanyl-, 19-methyl ester,
     (9→1)-lactam, cyclic (6→19)-disulfide (9CI)  (CA INDEX NAME)
FS   PROTEIN SEQUENCE; STEREOSEARCH
SQL  19
NTE  modified (modifications unspecified)
-------------------------------------------------------------------
 type            ------ location ------        description
-------------------------------------------------------------------
bridge           Gly-1       - Asp-9       lactam
bridge           Cys-6       - Cys-19      disulfide bridge
-------------------------------------------------------------------
```

sequence search

family search allows for conservative substitution

```
SEQ      1 GLPWGCPSDI PGWNTPWAC
           ========== =========
HITS AT:   1-19

**RELATED SEQUENCES AVAILABLE WITH SEQLINK**
MF   C96 H127 N23 O24 S2
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL
DT.CA  CAplus document type:  Journal; Patent
RL.P   Roles from patents:  BIOL (Biological study); PREP (Preparation); USES
       (Uses)
RL.NP  Roles from non-patents:  BIOL (Biological study); PREP (Preparation);
       PRP (Properties)

**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

               3 REFERENCES IN FILE CA (1907 TO DATE)
               3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10   ANSWER 2 OF 2  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   647807-35-0  REGISTRY
CN   L-Cysteine, glycyl-L-leucyl-L-prolyl-L-tryptophylglycyl-L-cysteinyl-L-
     prolyl-L-seryl-L-α-aspartyl-L-isoleucyl-L-prolylglycyl-L-tryptophyl-
     L-asparaginyl-L-threonyl-L-prolyl-L-tryptophyl-L-alanyl-,
     (9→1)-lactam, cyclic (6→19)-disulfide (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   BI 32169
FS   PROTEIN SEQUENCE; STEREOSEARCH
SQL  19
NTE
-----------------------------------------------------------------------
 type            ------ location ------         description
-----------------------------------------------------------------------
bridge           Gly-1       - Asp-9       lactam
bridge           Cys-6       - Cys-19      disulfide bridge
-----------------------------------------------------------------------

SEQ      1 GLPWGCPSDI PGWNTPWAC
           ========== =========
HITS AT:   1-19

**RELATED SEQUENCES AVAILABLE WITH SEQLINK**
MF   C95 H125 N23 O24 S2
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL
DT.CA  CAplus document type:  Journal; Patent
RL.P   Roles from patents:  BIOL (Biological study); OCCU (Occurrence); PREP
       (Preparation); USES (Uses)
RL.NP  Roles from non-patents:  BIOL (Biological study); OCCU (Occurrence);
       PREP (Preparation); PRP (Properties)

**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

               3 REFERENCES IN FILE CA (1907 TO DATE)
               3 REFERENCES IN FILE CAPLUS (1907 TO DATE)
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FILE 'CAPLUS, USPATFULL' ENTERED AT 17:05:29 ON 05 DEC 2005

```
=> s l10
L11             4 L10

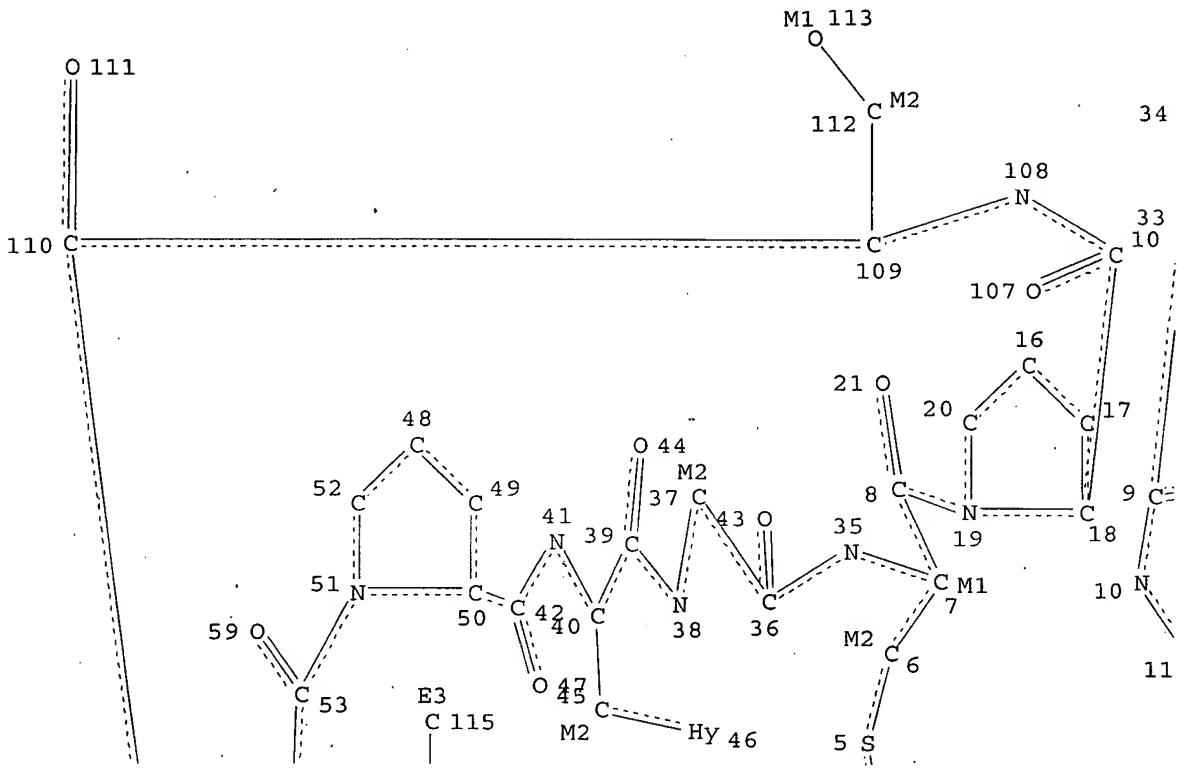
=> s l11 not l8
L12             0 L11 NOT L8

=>
```

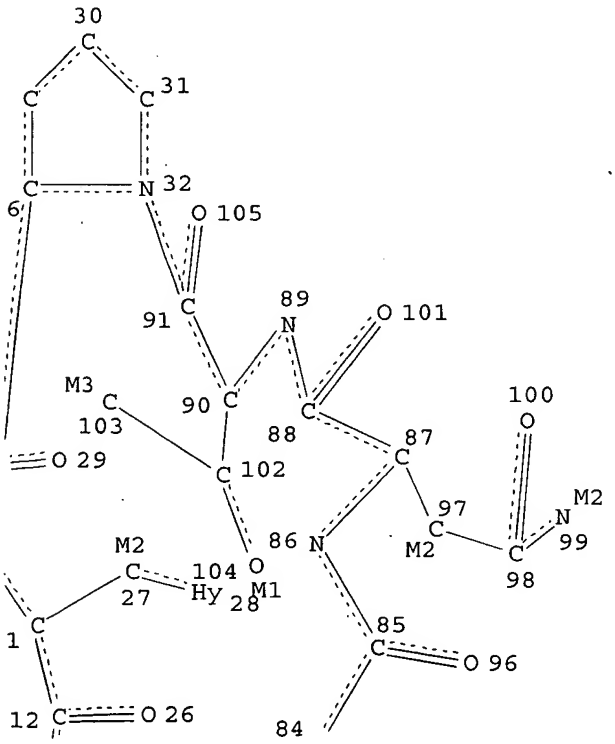
7 printed with structure search

sequence search yielded same 2 Registry records & 4 references that the structure search retrieved

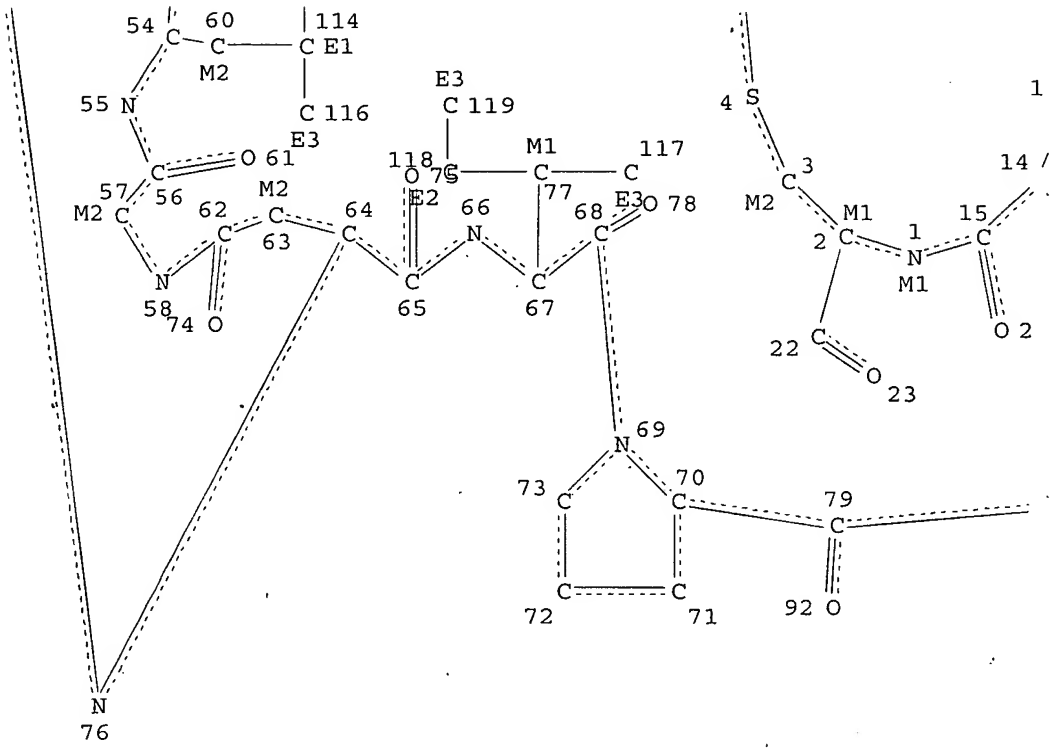
=> d que l3; d his full
L1 STR



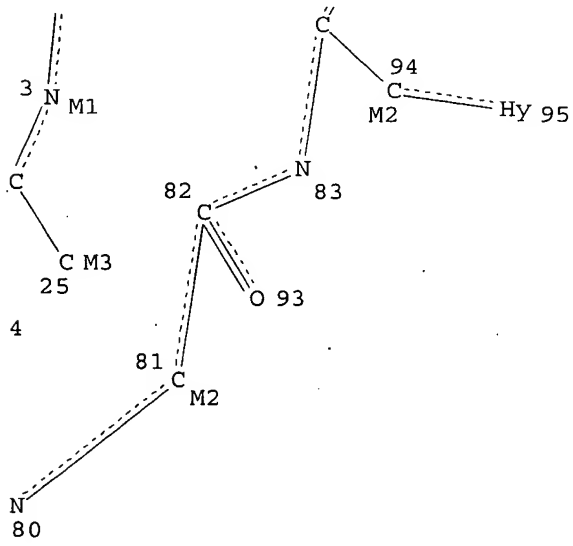
Page 1-A



Page 1-B



Page 2-A



Page 2-B
NODE ATTRIBUTES:

HCOUNT	IS M1	AT	1
HCOUNT	IS M1	AT	2
HCOUNT	IS M2	AT	3
HCOUNT	IS M2	AT	6
HCOUNT	IS M1	AT	7
HCOUNT	IS M1	AT	13
HCOUNT	IS M3	AT	25

```
HCOUNT  IS M2     AT  27
HCOUNT  IS M2     AT  37
HCOUNT  IS M2     AT  45
HCOUNT  IS M2     AT  57
HCOUNT  IS M2     AT  60
HCOUNT  IS M2     AT  63
HCOUNT  IS M1     AT  77
HCOUNT  IS M2     AT  81
HCOUNT  IS M2     AT  94
HCOUNT  IS M2     AT  97
HCOUNT  IS M2     AT  99
HCOUNT  IS M3     AT 103
HCOUNT  IS M1     AT 104
HCOUNT  IS M2     AT 112
HCOUNT  IS M1     AT 113
HCOUNT  IS E1     AT 114
HCOUNT  IS E3     AT 115
HCOUNT  IS E3     AT 116
HCOUNT  IS E3     AT 117
HCOUNT  IS E2     AT 118
HCOUNT  IS E3     AT 119
NSPEC   IS R      AT   1
NSPEC   IS R      AT   2
NSPEC   IS R      AT   3
NSPEC   IS R      AT   4
NSPEC   IS R      AT   5
NSPEC   IS R      AT   6
NSPEC   IS R      AT   7
NSPEC   IS R      AT   8
NSPEC   IS R      AT   9
NSPEC   IS R      AT  10
NSPEC   IS R      AT  11
NSPEC   IS R      AT  12
NSPEC   IS R      AT  13
NSPEC   IS R      AT  14
NSPEC   IS R      AT  15
NSPEC   IS R      AT  16
NSPEC   IS R      AT  17
NSPEC   IS R      AT  18
NSPEC   IS R      AT  19
NSPEC   IS R      AT  20
NSPEC   IS C      AT  21
NSPEC   IS C      AT  22
NSPEC   IS C      AT  23
NSPEC   IS C      AT  24
NSPEC   IS C      AT  25
NSPEC   IS C      AT  26
NSPEC   IS C      AT  27
NSPEC   IS C      AT  28
NSPEC   IS C      AT  29
NSPEC   IS R      AT  30
NSPEC   IS R      AT  31
NSPEC   IS R      AT  32
NSPEC   IS R      AT  33
NSPEC   IS R      AT  34
NSPEC   IS R      AT  35
NSPEC   IS R      AT  36
NSPEC   IS R      AT  37
NSPEC   IS R      AT  38
NSPEC   IS R      AT  39
```

NSPEC IS R AT 40
NSPEC IS R AT 41
NSPEC IS R AT 42
NSPEC IS C AT 43
NSPEC IS C AT 44
NSPEC IS C AT 45
NSPEC IS C AT 46
NSPEC IS C AT 47
NSPEC IS R AT 48
NSPEC IS R AT 49
NSPEC IS R AT 50
NSPEC IS R AT 51
NSPEC IS R AT 52
NSPEC IS R AT 53
NSPEC IS R AT 54
NSPEC IS R AT 55
NSPEC IS R AT 56
NSPEC IS R AT 57
NSPEC IS R AT 58
NSPEC IS C AT 59
NSPEC IS C AT 60
NSPEC IS C AT 61
NSPEC IS R AT 62
NSPEC IS R AT 63
NSPEC IS R AT 64
NSPEC IS R AT 65
NSPEC IS R AT 66
NSPEC IS R AT 67
NSPEC IS R AT 68
NSPEC IS R AT 69
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NSPEC IS R AT 71
NSPEC IS R AT 72
NSPEC IS R AT 73
NSPEC IS C AT 74
NSPEC IS C AT 75
NSPEC IS R AT 76
NSPEC IS C AT 77
NSPEC IS C AT 78
NSPEC IS R AT 79
NSPEC IS R AT 80
NSPEC IS R AT 81
NSPEC IS R AT 82
NSPEC IS R AT 83
NSPEC IS R AT 84
NSPEC IS R AT 85
NSPEC IS R AT 86
NSPEC IS R AT 87
NSPEC IS R AT 88
NSPEC IS R AT 89
NSPEC IS R AT 90
NSPEC IS R AT 91
NSPEC IS C AT 92
NSPEC IS C AT 93
NSPEC IS C AT 94
NSPEC IS C AT 95
NSPEC IS C AT 96
NSPEC IS C AT 97
NSPEC IS C AT 98
NSPEC IS C AT 99

```
NSPEC   IS C      AT 100
NSPEC   IS C      AT 101
NSPEC   IS C      AT 102
NSPEC   IS C      AT 103
NSPEC   IS C      AT 104
NSPEC   IS C      AT 105
NSPEC   IS R      AT 106
NSPEC   IS C      AT 107
NSPEC   IS R      AT 108
NSPEC   IS R      AT 109
NSPEC   IS R      AT 110
NSPEC   IS C      AT 111
NSPEC   IS C      AT 112
NSPEC   IS C      AT 113
NSPEC   IS C      AT 114
NSPEC   IS C      AT 115
NSPEC   IS C      AT 116
NSPEC   IS C      AT 117
NSPEC   IS C      AT 118
NSPEC   IS C      AT 119
DEFAULT MLEVEL IS ATOM
MLEVEL  IS CLASS  AT  21 22 23 24 25 26 27 29 43 44 45 47 59 60 61 74 75
          77 78 92 93 94 96 97 98 99 100 101 102 103 104 105 107 111 112
          113 114 115 116 117 118 119
GGCAT   IS PCY  HIC  LOQ  UNS  AT  28
GGCAT   IS PCY  HIC  LOQ  UNS  AT  46
GGCAT   IS PCY  HIC  LOQ  UNS  AT  95
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 119

STEREO ATTRIBUTES: NONE
L3            2 SEA FILE=REGISTRY SSS FUL L1


     (FILE 'HOME' ENTERED AT 16:50:45 ON 05 DEC 2005)

     FILE 'REGISTRY' ENTERED AT 16:50:53 ON 05 DEC 2005
L1              STRUCTURE UPLOADED
L2            0 SEA SSS SAM L1
L3            2 SEA SSS FUL L1
              SAVE TEMP L3 GUD272FULL/A
              D LC 1-2

     FILE 'REGISTRY' ENTERED AT 16:52:21 ON 05 DEC 2005
              D QUE L3

     FILE 'REGISTRY' ENTERED AT 16:52:58 ON 05 DEC 2005
              D STAT QUE L3

     FILE 'CAPLUS, USPATFULL' ENTERED AT 16:52:58 ON 05 DEC 2005
L4            4 SEA ABB=ON  L3
L5            4 DUP REM L4 (0 DUPLICATES REMOVED)
                    ANSWERS '1-3' FROM FILE CAPLUS
                    ANSWER '4' FROM FILE USPATFULL
              D IBIB ED ABS HITSTR 1-4
```

```
FILE 'HOME' ENTERED AT 16:53:21 ON 05 DEC 2005

FILE 'REGISTRY' ENTERED AT 16:54:11 ON 05 DEC 2005
            D STAT QUE L3
            D IDE L3 1-2

FILE 'CAPLUS, USPATFULL' ENTERED AT 16:54:12 ON 05 DEC 2005
L6             4 SEA ABB=ON  L3
L7             4 DUP REM L6 (0 DUPLICATES REMOVED)
                     ANSWERS '1-3' FROM FILE CAPLUS
                     ANSWER '4' FROM FILE USPATFULL

FILE 'REGISTRY' ENTERED AT 16:55:13 ON 05 DEC 2005
            D STAT QUE L3
            D SQIDE L3 1-2

FILE 'CAPLUS, USPATFULL' ENTERED AT 16:55:14 ON 05 DEC 2005
L8             4 SEA ABB=ON  L3
L9             4 DUP REM L8 (0 DUPLICATES REMOVED)
                     ANSWERS '1-3' FROM FILE CAPLUS
                     ANSWER '4' FROM FILE USPATFULL
            D IBIB ED ABS HITRN 1-4

FILE 'HOME' ENTERED AT 16:55:28 ON 05 DEC 2005
            D QUE L3


FILE HOME

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STRUCTURE FILE UPDATES:     4 DEC 2005  HIGHEST RN 869277-23-6
DICTIONARY FILE UPDATES:    4 DEC 2005  HIGHEST RN 869277-23-6

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* available and contains the CA role and document type information. *
*                                                           *
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FILE CAPLUS

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FILE LAST UPDATED: 4 Dec 2005 (20051204/ED)

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FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 1 Dec 2005 (20051201/PD)
FILE LAST UPDATED: 1 Dec 2005 (20051201/ED)
HIGHEST GRANTED PATENT NUMBER: US6971121
HIGHEST APPLICATION PUBLICATION NUMBER: US2005268363
CA INDEXING IS CURRENT THROUGH 1 Dec 2005 (20051201/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Dec 2005 (20051201/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2005

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>>> original, i.e., the earliest published granted patents or <<<
>>> applications. USPAT2 contains full text of the latest US <<<
>>> publications, starting in 2001, for the inventions covered in <<<
>>> USPATFULL. A USPATFULL record contains not only the original <<<
>>> published document but also a list of any subsequent <<<
>>> publications. The publication number, patent kind code, and <<<
>>> publication date for all the US publications for an invention <<<
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>>> records and may be searched in standard search fields, e.g., /PN, <<<
>>> /PK, etc. <<<

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>>> through the new cluster USPATALL. Type FILE USPATALL to <<<
>>> enter this cluster. <<<
>>> <<<
>>> Use USPATALL when searching terms such as patent assignees, <<<
>>> classifications, or claims, that may potentially change from <<<
>>> the earliest to the latest publication. <<<

This file contains CAS Registry Numbers for easy and accurate substance identification.

=>

```
=> d his full

     (FILE 'HOME' ENTERED AT 16:11:36 ON 02 DEC 2005)

     FILE 'CAPLUS' ENTERED AT 16:11:55 ON 02 DEC 2005
                SET LINE 250
                SET DETAIL OFF
                E US2003-621272/AP,PRN 25
                SET NOTICE 1000 SEARCH
L1            2 SEA ABB=ON  US2003-621272/AP
                SET NOTICE LOGIN SEARCH
                SET LINE LOGIN
                SET DETAIL LOGIN
                D SCAN
                SEL RN

     FILE 'REGISTRY' ENTERED AT 16:12:43 ON 02 DEC 2005
L2           26 SEA ABB=ON  (10238-21-8/BI OR 105816-04-4/BI OR 111025-46-8/BI
                OR 122320-73-4/BI OR 135062-02-1/BI OR 141732-76-5/BI OR
                145375-43-5/BI OR 161600-01-7/BI OR 21187-98-4/BI OR 29094-61-9
                /BI OR 300865-11-6/BI OR 391208-93-8/BI OR 54249-88-6/BI OR
                56-03-1/BI OR 56180-94-0/BI OR 647807-35-0/BI OR 647807-36-1/BI
                 OR 657-24-9/BI OR 72432-03-2/BI OR 89750-14-1/BI OR 9004-10-8/
                BI OR 9007-92-5/BI OR 9033-06-1/BI OR 93479-97-1/BI OR
                94-20-2/BI OR 97322-87-7/BI)
                D SCAN
L3            2 SEA ABB=ON  L2 AND 19/SQL
                D SCAN
                D SQIDE
                E BRIDGE/NTE
                E LACTAM/NTE
                E DISULFIDE/NTE
                E CYCLIC/NTE
L4            2 SEA ABB=ON  GLPWGCPSDIPGWNTPWAC/SQSFP
                SAVE TEMP L4 GUD272SEQ/A
L5            2 SEA ABB=ON  L4 AND L3

     FILE 'REGISTRY' ENTERED AT 16:16:59 ON 02 DEC 2005
                D QUE L4
                D SQIDE L4 1-2

     FILE 'CAPLUS, USPATFULL' ENTERED AT 16:17:28 ON 02 DEC 2005
L6            4 SEA ABB=ON  L4
                D SAVED


     FILE HOME

     FILE CAPLUS
```

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STRUCTURE FILE UPDATES: 30 NOV 2005 HIGHEST RN 869059-01-8
DICTIONARY FILE UPDATES: 30 NOV 2005 HIGHEST RN 869059-01-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

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* *
****

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FILE COVERS 1971 TO PATENT PUBLICATION DATE: 1 Dec 2005 (20051201/PD)
FILE LAST UPDATED: 1 Dec 2005 (20051201/ED)
HIGHEST GRANTED PATENT NUMBER: US6971121
HIGHEST APPLICATION PUBLICATION NUMBER: US2005268363
CA INDEXING IS CURRENT THROUGH 1 Dec 2005 (20051201/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Dec 2005 (20051201/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2005

>>> USPAT2 is now available. USPATFULL contains full text of the <<<
>>> original, i.e., the earliest published granted patents or <<<
>>> applications. USPAT2 contains full text of the latest US <<<
>>> publications, starting in 2001, for the inventions covered in <<<
>>> USPATFULL. A USPATFULL record contains not only the original <<<
>>> published document but also a list of any subsequent <<<
>>> publications. The publication number, patent kind code, and <<<
>>> publication date for all the US publications for an invention <<<
>>> are displayed in the PI (Patent Information) field of USPATFULL <<<

>>> records and may be searched in standard search fields, e.g., /PN, <<<
>>> /PK, etc. <<<

>>> USPATFULL and USPAT2 can be accessed and searched together <<<
>>> through the new cluster USPATALL. Type FILE USPATALL to <<<
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>>> classifications, or claims, that may potentially change from <<<
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